





Tracts 1807.

(1)

On Medical Education

by

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SOME OBSERVATIONS ON MEDICAL EDUCATION:

AN INAUGURAL ADDRESS DELIVERED BY W. MITCHELL
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To one whose duty it becomes to give an address, the most difficult part of the undertaking is to choose a subject. Personally, I have found under such circumstances that I have done best by speaking about something in which I was at the moment deeply interested, and with the details of which I was thoroughly conversant. This mode of procedure is apt to cripple all flights of genius, and is an effectual bar against attempts to soar into the realms of the oratorical or the ideal. On the other hand, it permits the speaker the use of plain language and the exercise of common sense, so that, whether his audience thinks much of his performance or not, at all events they feel that he knows what he is talking about.

In the matter of Medical Education, then, which is what I propose to speak about, I think I may without any egoism venture to give my opinion, because it is just a quarter of a century ago this very month that I entered upon my first teaching post—that of Demonstrator of Anatomy in the University of Glasgow, under Professor Allen Thomson. Ever
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since then I have been continuously occupied in teaching anatomy or surgery, and I believe that I now thoroughly comprehend that curious animal, the medical student, his manners, his customs, his habitats, and his food:—speaking of him mentally. I feel I am in touch with him.

But there has been another side to my life, inasmuch as the form of practice which has fallen to my lot has thrown me in contact with the practitioner. I see him at work. I know what he does, and how he does it. I know his good qualities, and I see his weak points, which might have been strengthened in his youth by better education. The man who practises in the wealthy suburb, the hard-working doctor of the crowded city quarter, the ship doctor, the country doctor, the toiler in the mining district (his lot only a trifle less hard than that of his patients)—I venture to say that I know them all. And I do not say it with the view of magnifying mine office in any way, but because I am convinced that, without a general all-round acquaintance with both student and doctor of the kind which it has been my good fortune to acquire, a man has no right to talk about medical education. Why such varied and utterly irreconcilable views about medical education? Mainly from the fact that the men who talk the loudest about it are often one-sided men. Their own life-education in the knowledge of men and things is imperfect. At one meeting stands up the purely scientific professor. He has never been in practice in his life. Sometimes (notably if he be a physiologist) he is not a doctor at all. He knows about students; he knows what he can do with their brains; he wishes teaching to be sound and complete; and above everything he wishes to make the student a pundit in his own subject, which he believes to be the only one necessary for salvation. He is as ignorant of what that student is going to be and to do as that student is himself. Then comes a gathering of practitioners—a British Medical Association meeting, for example. Up gets a tribune of the people, and he cries: “What we want is to have our young men turned out practitioners straightway. We have to pay them as assistants, and we find they know nothing. Their inexperience

in midwifery is alarming; they jumble up measles and scarlatina, and typhus and flea-bites, in a shocking manner; they are utterly unable to concoct a cough mixture; of medical book-keeping they know nothing; and as to a good bedside manner, they do not understand what the thing means. Give us back the good old days of apprenticeship; the times of the old apothecary, the times before frogs and galvanometers, when men were taught to be doctors, and knew what real sound physicking meant." Well, gentlemen, so long as these persons tell me what they find wrong or defective in the medical student's education, I am prepared to listen with attention, but when they proceed to lay down the law as to how to remedy the defects, I have only one thing to say about them, and that is, that I do not know which is the sillier of the two—the professor or the practitioner. Any fool can tell when a person is sick, but it takes a wise man to cure him.

Now, to show that I am not exaggerating: in August 1889 Mr Wheelhouse was President of the British Medical Association. His address was a laudation of the old system of apprenticeship, and an appeal for its restoration. The gods in the audience applauded vociferously. In August 1890 Dr Wade was President of the British Medical Association. His address was intended to show that the medical student's scientific education was imperfect, and that it ought to be much extended and rendered much more rigorous. Now, what are we to think of this? Here are men of education and experience, who belong neither to the type of the professor nor of the practitioner, whom I have just sketched, and who nevertheless, from the same chair and to the same audience, propound the most opposite doctrines. How is this to be explained? Well, I believe it arises from two causes: firstly, because by the time that men have arrived at the age of being presidents of the British Medical Association they are no longer in touch with the student. The medical student's life of to-day is an amazingly different one from that of fifteen years ago. Educational matters shift and change with almost kaleidoscopic rapidity, and the man who, when he as of a medical school at

forty, was intimate with the students' life, at sixty or sixty-five knows uncommonly little about it. And then, again, when a man has to make a great speech on medical education to a great audience, he *must* try to be original, and say something out of the common. Plain sense will not bring the house down on such occasions, and so he is impelled to push his argument to its extremest limits for the sake of lifting it above the common level. But, gentlemen, any question you like to mention may be compared to a string. There are two ends to it. One set of persons are pulling at one end, another set of persons are pulling at the other. The man of sense looks at them and says, "There must be some *juste milieu* between those persons, who to my certain knowledge are neither knaves nor fools, and yet who differ so widely in opinion."

Some eighteen months ago the General Medical Council appointed a committee to deal with questions of education. Strong complaints were made by certain members of the Council that the education of medical students was in many points defective; that, when they were finally turned out with their degrees or diplomas, they were found lamentably wanting in an acquaintance with the practical parts of their profession and more especially in a knowledge of common diseases. The argument was that we professed to pass a man into the ranks of our profession only when he was a thoroughly well-trained doctor, but that we actually sent men who could not tell a case of measles when they saw it, and who were just as fit to tie the innominate as to use the short forceps. And the further argument was that we had made a great mistake in giving up the old apprenticeship, and that we ought in some way to revert to it. Now, there was a certain truth in this statement. The Council, as a body, admitted that the accusation was justifiable. But there were many men who said they did not care if the accusation *was* true. They held that it was impossible to turn out a lad after four years' study an experienced practitioner; and they held, moreover, that the difficulties of teaching him what were called "common diseases"—such as measles, thrush, scarlet fever, chicken-pox, and others of the same category,

which form the staple of general practice,—were so great as to be insurmountable.

The Council, having heard all that was to be said on both sides, very wisely ordered their Committee of Education to enter into the whole question, and report upon it to them. I have the honour to belong to the Committee, and I can say that no body of men ever strove harder to settle a knotty problem than we did. We owed much to the investigations into the conduct of the continental schools of medicine made by our chairman, Professor Struthers. Our first endeavour was to find out what was to be done with the apprenticeship question, which was being advocated so warmly by some. It was self-evident that if any apprenticeship scheme were renewed, it would have to be placed either before, during, or after the four years' course of study. Now just let us imagine our taking a boy of seventeen or eighteen from school, or a young man of twenty-one from a University, and placing him for a year with a general practitioner before commencing his medical work! Of drugs he knows nothing; of disease he knows nothing; of midwifery he knows nothing. Pray, of what earthly use can such a young gentleman be to a practitioner? and of what earthly use can a practitioner be to such a young gentleman? I have never been able to understand how a man of such good sense as my friend Mr Wheelhouse could ever have persuaded himself to advocate such a scheme. As to his speech at Leeds receiving applause, a British Medical Association mob after dinner will applaud anything. According to my experience, one of two things would infallibly happen to the young gentleman who would take out his apprenticeship before beginning his curriculum: either he would be so disgusted by seeing the most mean and repulsive side of our profession that he would turn away from it altogether; or else, if he elected to go on with it, he would have simply contracted habits of idleness, and would have lost the power of continuous mental work to such an extent as to be seriously hindered in taking to the hard and continuous exertion of medical study. Then came the question of placing this apprenticeship during the student's curriculum. A careful

survey of what he had to do showed that there was no room anywhere for this. But one of our popular representatives, who had never taught in his life, conceived the brilliant idea that the student's vacation might be profitably employed as an apprentice, say, to a practitioner in a colliery district or mill town. The Committee, however, being men of some sense and experience (not to say common humanity) thought that a student who worked well during session deserved his holiday free. Therefore it only remained to put in the apprenticeship after the fourth year of study, and it was suggested that a man might pass his examinations at the end of his fourth year, but should not receive his degree or diploma until he had spent a year as pupil or assistant. This notion met with very considerable acceptance, but after the Committee had carefully considered it, they thought that, seeing that it involved a four years' curriculum and a year's pupilage, by much the best way would be to make a five years' curriculum compulsory, and order that the fifth year should be spent in practical study. This scheme was, therefore, propounded to the Council, and was carried by them unanimously; and, what was more, that somewhat faint-hearted body actually announced that this time they meant to be obeyed. As showing how rapidly views alter upon educational questions, Sir John Banks reminded the Council that only a few years previously, when he had proposed that the Council should recommend a five years' curriculum, he was positively jeered at for proposing such an unreasonable thing.

Well, gentlemen, I think, for my own part, that the passing of the five years' curriculum was one of the best pieces of business the Council ever did. Among the arguments against it was the question of the increased expense of a medical education involved by a longer course of study. But if we look at other professions, we shall find that a medical education is a very cheap affair. If the student lives in a town where there is a medical school, and can reside under the parental roof, the actual fees payable are not more than one hundred guineas anywhere. To apprentice a son to an architect or an accountant, or to make him a barrister or a clergyman, is a decidedly

more expensive undertaking. In fact, there is no strictly professional training which is attained so cheaply as the medical one. Another argument was that the increased expense would keep out from our ranks many poor but very clever men. It is a great question, however, whether these poor geniuses really abound to any very great extent. While there may be, moreover, rare exceptions, there can be no doubt that very poor men, however clever, are not brought up amid the surroundings of educated gentlefolks; and that, as a necessary result, they do not possess those refined and cultivated habits which the members of a learned profession ought to have. My own experience of them has been that after they have entered our ranks, and forced their way up by sheer dint of work and hard-headedness, they are too often men of an aggressive and combative type, who certainly do not adorn the profession of medicine from a social point of view. It is also a very unreasonable thing that a scheme, which would obviously be greatly to the benefit of ninety-nine ordinary men, should be nullified because a hundredth problematical poor genius cannot compass it. The greatest good of the greatest number is the point to be aimed at, and rules should be made for the mass, and not for the isolated exceptions. I remember, moreover, at the end of a considerable discussion on this topic an old and experienced member got up, and said that we need not trouble our heads too much about the matter, because he never yet knew a poor but resolute and persevering genius who would not overcome the difficulties of a five years' session just as easily as those of one of four years.

Having, then, announced that after a certain date the curriculum of every licensing body will have to be a five years' one, the Council proceeded to offer suggestions to those bodies as to how the five years might be made the best use of. And first, what about the so-called preliminary sciences? In the old apprenticeship days a man was indentured to a practitioner for five years, and he then proceeded to "walk the hospitals," as it was called, for about two years more, after the fashion of Mr Bob Sawyer and Mr Ben Allen. Of truly scientific education he had

none, except what he chose to acquire for himself. But from this certainly deplorable state of matters we have proceeded to the opposite extremity. The pendulum has swung the other way about, and that nearly to its fullest reach. In old days, if a man had a fair knowledge of rough anatomy, that was considered quite sufficient. But as things advanced it was thought right that he should know something of the uses of the structures which he dissected, and so physiology came upon the scene. But no sooner had the teaching of this science assumed a certain amount of importance than the physiologist said that he could not teach his subject properly unless the student previously had some notions of the plans upon which living things were made, and so the zoologist and the botanist were called in to prepare the student for the physiologist. But this latter teacher, insatiable as the horse-leech, soon cried out that the student must know also chemistry and physics before coming to him, else how could he make him even a decent physiologist, far less that accomplished physiologist which he ought to be? And then, when the physicist got hold of the poor lad, he exclaimed that it was impossible for him to do justice to his subject unless his pupil had a really sound previous acquaintance with higher mathematics. And thus, in course of time, there has been piled upon the shoulders of the unhappy student a burden of scientific subjects, under the weight of which he now staggers for the first twelve months or two years of his course. And when at last he quits the examination room, and drops his wretched fardel behind him (never to be picked up again), hardly even the joy of Christian in the *Pilgrim's Progress* under similar circumstances equals the joy of the medical student who has passed his preliminary examination in science. For this state of matters two bodies are chiefly responsible: the Universities of London and Edinburgh. The former institution is not a teaching body interested in the personal growth and welfare of its students. It is simply an examining mill, constructed upon the Chinese type. From the commencement its avowed object has been simply to make its examinations the most difficult to pass of any University in

the world. Consequently its examiners have been just so many scientific sphinxes, having only one object with regard to the student, viz., that of propounding to him the most intricate and puzzling scientific conundrums. So soon as the student got a better text-book or a better grinder, so soon did the sphinxes set to work to see how they could get the best of the youth over his text-book, and set at naught the works of the grinder. I have often compared the student to a person seated on a chair. At one side stands the scientific teacher shovelling down his throat all sorts of eminently condensed and highly nutritious foods,—your Brand's anatomical jelly, your Valentine's zoological juice, your Liebig's extract of chemistry. As the student comes to the bursting-point, the teacher calls on him to make one more effort: "Just another good mouthful of peptonised physiology, my dear pupil, and you'll be all right." Then advances a gentleman who has been quietly watching the proceeding, armed with a stomach-pump and a basin. "Pray, open your mouth, young gentleman, and let me put this tube down for a minute or two." Inarticulate sounds are heard, and in a brief period all the juices and extracts are in the examiner's basin. Has the student had a good meal? Not a bit of it. He has not had time to digest anything. *Cantat vacuus studens*, as he joyfully hastens away from the scene. Is this good for his stomach? No. Then neither is a similar proceeding good for his brain.

The faults of the University of Edinburgh have proceeded from a different cause. There has always been scientific teaching there, but as the University increased in importance, and its students became more numerous, so did the teaching of the strictly scientific professors become more extended and their examinations more severe. For years their social position has been excellent, and their emoluments enormous. To keep up the cry 'about scientific training is life and death to them, and the smallest attempt to diminish their influence is met by the fiercest opposition and shrieks of "Medical education in danger," "Destruction of scientific training," and similar cries. It seems hardly credible, but in my own case I can honestly aver that, of all the subjects which I had to get up for my degree, botany

was the one which gave me the most trouble and concern. At that time the professor thereof was at his zenith. He plucked more men than any professor in the University, and ground down the unhappy students beneath a botanical despotism of the most terrorising sort. I remember with horror the hours I had to spend painfully committing to memory botanical orders. I might just as well have got up ten pages of a street directory, while the proceeding would have been somewhat more interesting. To say that botany is of any practical utility to a doctor in his profession is absurd. In ancient times, when men made their own tinctures and infusions from the plants which they gathered with their own hands, botany might have been of some use, but at present there is not a doctor from Land's End to John O'Groat's House who is not periodically waited upon by a druggist's traveller, who will send him by the next train all the drugs under the sun. With regard to zoology, I am told that the student who has dissected his frogs and worms and limpets is in a much better position to commence the study of human anatomy than one who has not. For the sake of argument, I will admit that he is so at the commencement of the winter session. Long before the end thereof his advantage is gone. In a very few weeks the perfectly fresh student picks up his anatomical terms, and sees his way about with his dissection, while the gentleman who has spent a good deal of time in the company of the frog finds that his knowledge does not help him much with the relations of the femoral artery or the prostate gland. And the same criticism applies to chemistry, where the amount of knowledge forced into the student is infinitely beyond what the exigencies of his profession will ever require from him.

The worst of it is that the motto of each of these science teachers is the old one, "There's nothing like leather." When I have remonstrated with them, they have indignantly replied that sooner than teach their subject imperfectly they would rather not teach it at all; that nothing can be more degrading than to give a student mere smatterings of a subject, and that if the man is to learn science at all, he must learn it in a sound

and thorough manner:—"and so say all of us," cry the chemists and botanists, and zoologists and physicists. Meantime the student throws away a large part of the four years during which he is supposed to be making himself a doctor, and the minute he has done with these scientific gentlemen and their works, his one object is to forget all about them.

And now, I suppose, after this tirade, you think I would abolish all scientific teaching and throw in my lot with the gentlemen who wish to revive apprenticeship, and who desire to make experienced medical men out of raw lads. I remember once rather fluttering that sacred body, the General Medical Council, by saying, "Gentlemen, God forbid that at the end of four years we should turn out our medical students practitioners." My attack is not upon scientific teaching as such; it is directed against wasting the student's time and energies in teaching him sciences whose bearing upon his profession is only remote, while we are neglecting sciences which would prove of the utmost value to him in after life. Take the enormous field of pathology and morbid anatomy. You wish the student to understand the use of the microscope. What better field for its use? You wish to perfect his manual dexterity. I know of nothing more useful for this end than the dissecting and mounting of morbid specimens. Mr Lawson Tait wants all medical students to learn the use of their hands by a course of carpentry, or some such process. This sort of thing takes with the public. I do not believe in it for a moment. The nearest approach to exercising your hands upon the living body is to exercise them upon the dead. And if you want to teach your student habits of methodical study, is not the classification of disease as good for that purpose as the classification of plants? Does he want to learn how to observe carefully and record accurately? Is not the making of one *post-mortem* as valuable in that respect as the dissection of many limpets? Our neglect of pathology and morbid anatomy in this country has been simply shameful. The Germans have beaten us out of the field in this respect. Twenty years ago there was not a text-book of genuine

pathology in the English language, while the Germans had them in abundance. Now, it is true, we are slowly waking up to our defects in this matter, and the day of the pathologist is coming. I hail it with joy, and I do not care if his science drives out of the field all the so-called preliminary sciences which I have been tilting at. Their bearing upon true medicine is almost *nil*. As a means of mental training they offer nothing which the study of pathology cannot give too. While the student is working at that he feels that he is acquiring knowledge which will serve him in good stead every day of his life—knowledge, moreover, which he can only learn during his student career because, when he enters into practice, the *post-mortem* room and the laboratory are no longer within his reach.

Nothing gave me greater pleasure than the reply to Mr Wheelhouse's Leeds speech by that veteran teacher, Professor Gairdner, on "Accuracy in Teaching." One day spent in a hospital ward, investigating thoroughly and recording with order and precision the case of one single patient, under the guidance of a skilled clinician, appears to me worth a year of cough mixtures and ordinary midwifery. What I have to complain of in my brethren in general practice is precisely what Sir James Paget was talking to us about the other day—a want of accurate observation. This can only be taught in youth, and must be taught at the beginning. Observe a first-rate teacher of music. Does he teach his pupil tunes to begin with? Not for a moment. He understands that no sooner does a man with a good ear know his notes than he wants to play tunes, and probably can play them too; but he understands equally well that that man, if allowed to do so, will never be a musician. He teaches him scales—hard, dry, monotonous scales; the same things over and over again, until the mere sight of a scale evolves from the pupil's fingers the proper sounds. That is the scientific training in music. As time goes on the scales get harder and harder, but they must be overcome. At last when the pupil asks when his instructor is going to teach him to play tunes, the teacher replies, "My dear pupil, having mastered that last scale, which you have just played, you can now play

anything." It is precisely the same with us. My long experience has enabled me to see what becomes of students. I know the man who gets a good degree, whose scientific training has been severe, whose clinical observation is accurate. When he is dubbed a doctor, and sent to be assistant in a colliery district, he is helpless. I know also the man who has been an assistant for years, and who has at last, as through the eye of a needle, squeezed through the portals of some licensing body. At practice of a sort he is *au fait*. With him a cough is a disease. The cough of aneurism, the bronchitic cough, the stomach cough, the cough of heart trouble,—each one of them is but a simple cough to him, and he treats them all with the same cough mixture. He, too, goes as assistant in the colliery district. His success is beyond description, and he threatens to throw his master into the shade. Let us follow these two gentlemen for ten years. Number one, the imbecile of the colliery practice, has mastered the details of general work before twelve months are out, and is now pushing and fighting his way upwards among good-class patients, who have come to know that he is a well-educated man, who studies his cases. Number two, the hero of the colliery practice, is still there, dispensing the ever-flowing cough mixture, the slave and drudge of the profession. He reminds one of the automatic Dutch doctor, described by Professor Gairdner. You write your symptoms on a piece of paper, and enclose half-a-crown. You push this into the slot, you pull open the drawer, and you find there—the appropriate prescription.

But you will remember, gentlemen, that I said, at the beginning, that the General Medical Council recognised and admitted the fact that our students lacked many things in practical training, and to remedy that defect they have urged that all lectures should be got over by the end of the fourth year, and that the fifth year should be devoted absolutely and completely to practical work. They leave the student free as to how he shall spend it. He may spend it in the ward of a clinical hospital, or in a dispensary, or as pupil in a country infirmary, or as pupil with a private practitioner, who shall have to apply

for a licence to keep such pupils. In doing this the Council felt they had done all they could for practical work, and the student must be left to his own devices a good deal to select what manner of work he himself feels will be best and most useful for him.

I would fain hope that the General Medical Council will follow up the work they have done as regards professional education by turning their attention next to the preliminary general training of the student. There is no denying the statement made the other day in a leading medical journal, that the "English middle-class boy is, with the exception of the Spaniard and the Turk, the worst-educated boy in Europe. He is most generally educated by a man who keeps a boarding-house for boys, and calls it a school." This indictment is, in my experience, perfectly true. It is not the boy's fault; it is his teacher's. How, then, does the badly-educated lad get into our profession? Why is he not stopped by the entrance examinations? To those who know the ins and outs of such matters, nothing is more easy of explanation. There are certain second-class licensing bodies, who conduct most wonderful examinations; their papers are models of severity, but nobody sees what answers they take. And deans of medical schools know very well that men who are plucked at genuine entrance examinations simply go to those places and get through. I would like to see the Council itself organise an uniform examination, which would act like a rough sieve, and would at once sift out and reject those men who never ought to come to our profession, and who would be much happier and much richer as shopkeepers.

Some may say that if I had my way, at this rate, I would greatly diminish the number of practitioners. That is just exactly what I would like to do. The fact is we are getting too numerous. There are too many of us on the ground, especially in the big towns. Why do charitable bodies of all kinds get our services for nothing? Simply because, if the young doctor were to ask the committee of such a body for a salary, he would be told they could get plenty of other young men to do the work for nothing, for the sake of the connection.

Why do we find qualified men setting up sixpenny dispensaries? Why do we find them offering to take a club at 3s. 4d. a man from their next-door neighbour, who does it at 3s. 6d? First, because they cannot starve, and as they cannot drop upon a legitimate opening in practice, they make an illegitimate one. Secondly, because they never were gentlemen to begin with, and don't know what gentlemanly conduct and feeling is. You cannot put them out; the only way is to keep them from coming in. And the worst of it is, that the mischief these men do does not come down upon their own heads alone. They lower our whole profession in the estimation of the public, and degrade us in the social scale. I remember the late Dr Fothergill, who was an observing and an independent man, getting furiously assailed because he said that while the youngest curate, the junior of the bar-mess, or the sub-lieutenant of a marching regiment, had the *entrée* into any house and into any society in virtue of his cloth, the doctor had not. I say he was perfectly right. The great men of our profession—the Pagets and Jenners—are on an equality with the greatest in the land. But as regards the rank and file, each man has to make his place in society, not by virtue of his cloth, but by virtue of his own private character, manners, and attainments.

I would gladly see all this altered. As a profession, we have risen many degrees in public estimation of late years. We are now exercising a powerful influence in many departments of civic and national life. I would like to see all our members not merely doctors, but men of good education and good breeding. I know that with improved social position comes increasing public respect, and with public respect come better emoluments, more leisure, greater honour, and so greater happiness. If I have alluded often—perhaps somewhat severely—to our defects as a profession, I do so in the capacity of the faithful doctor, who will not allow his patient to consider himself a completely sound man while there is some lurking trouble hanging about him. I do so, in short, gentlemen, out of my love for that profession to which I glory in belonging, and which I have all my life done my best to advance.



